

## District Branches Out its STEM Curriculum

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*A series on how Egg Harbor Township Schools and community groups are educating students in science, technology, engineering and math, collectively known as STEM.*

EGG HARBOR TOWNSHIP – In classrooms across the district, children work together in small groups, separating the tasks of the project. Some volunteer to create a blueprint of sorts while others wait for the hands-on building tasks to begin.

The tools of the trade may be popsicle sticks, clay and loose stones or more advanced materials like gears, hot glue guns and motors. Yet while the activities vary from classroom to classroom, teacher to teacher and school to school, these students are all working toward one shared goal - to become more familiar and more fluent in the art of STEM.



STEM stands for science, technology, engineering and math. It's a popular catchphrase in education circles these days as it encompasses four subjects that can sometimes be intimidating to students. Presented in a hands-on experimental fashion, the content of the lessons is delivered in an accessible and interesting way.

STEM lessons offer the best of differentiated instruction, another term that gets a lot of focus in schools these days. The activities meet the students at their interest points and skill levels and build off of what they already know in order to enlighten them to a higher understanding of the concepts.

Egg Harbor Township School District has offered STEM lessons at the high school level for years, but this year it began offering the curriculum at the lower levels.

There's now STEM class at Alder Avenue taught as one of the specials that students must complete, as well as a new pilot program at Slaybaugh Complex in which one classroom at each grade level – starting at yes, kindergarten – offers STEM lessons.

There's certainly plenty of preparation and planning that goes into crafting these targeted lesson plans which also can incorporate language arts, and educators are deliberate as they set the stage for the cross-curricular ideas to take hold.

But step inside the doorway of the classrooms where the lessons are under way and you'll hear giggles, countdowns, cheers and lots of thoughtful questioning.

Has learning ever been more fun?

The answer is no, according to Rodney Velardi, science supervisor for the district who oversees the science curriculum. Velardi said he wishes his school experience was like the one today's students are receiving inside the district's STEM classrooms.

"This is how I learn. This is where teaching is the most fun," he said. "I was the kid who couldn't sit still. I had to keep moving, and as a teacher, I was the same way. I always enjoyed the hands-on activities best."

Recent projects, such as sixth graders building mechanical toys of their own creation, allow each student to shine, he said.

"Everyone possesses a talent," Velardi said. "With these lessons, each student can bring his or her skill to the table. Some may be gifted creatively and want to help paint the project. Others might be better building it."

The students often work in teams or pairs and the collaborative nature of the projects gives the student teams the freedom to explore, test and sometimes go back to the drawing board and redesign their projects until the goal is reached.

For many children, it also offers another benefit, according to one teacher.

Sharon House, the second grade teacher on the team that launched the pilot program at Slaybaugh this year, said she has seen a noticeable bump to some of her students' self-esteem as the class works through her "STEM challenges."

"A few of my students are struggling with reading, but they are excelling at these challenges," she said. "I have noticed that they have more confidence in other activities now as a result and have been progressing."



House said the lessons offer additional opportunities to foster good social skills like public speaking.

"Every team has to select one person to present their designs at the end of each challenge, so they are getting experience in preparing and presenting their ideas in front of the class," she said.

Velardi said the STEM lessons can often challenge teachers to change their perspective as well.

"There's a paradigm shift that happens," he said. "The thought is that you lecture first, teaching the concepts, then do an activity, but you can do both at the same time. There are these great teachable moments that occur as kids are figuring things out for themselves and you can answer a question about their specific project. It makes sense to them because they are doing it themselves right then."

